We claim:

1. A method for adjusting a magnetic sensor including:

a magnet for generating a magnetic field;

a sensing target unit in which a first sensed portion and a second sensed portion are magnetically inequivalent to each other, are disposed along a moving path passing through a position opposed to said magnet through a magnetic gap and can be moved integrally along said moving path;

a magnetic field detecting section for detecting magnetic field fluctuations in said magnetic gap based on the fact that said first sensed portions and said second sensed portions pass through said magnetic gap alternately;

a waveform processing section for binarizing detection waveform detected by said magnetic field detecting section based on a predetermined threshold; and

a threshold adjusting and setting section for setting said threshold so that it can be adjusted relatively with respect to said detection waveforms, the method comprising the steps of:

obtaining detection waveforms for a plurality of setting values by said magnetic field detecting sections while changing sensing gap lengths, which are formed between said first sensed portion or said second sensed portion and said magnetic field detecting section in said magnetic gap, among said plurality of setting values;

calculating an intersection point level value indicated by an intersection point between a plurality of detection waveforms detected for said plurality of setting values when said plurality of detection waveforms are superimposed in phase; and

adjusting said threshold so that it agrees with said intersection point level value.

2. The method for adjusting a magnetic sensor according to claim 1, wherein

said plurality of setting values are set at two levels, and

said calculating step comprises the step of calculating an intersection point level value that is indicated by an intersection point between two detection waveforms.

3. The method for adjusting a magnetic sensor according to claim 1, wherein

said sensing target unit is a variable-gap sensing unit for adjustment which is attached to said magnetic sensor in place of a normal sensing target unit having a constant sensing gap length and in which segments having different sensing gap lengths coexist, and

said step of obtaining detection waveforms comprises the step of obtaining said detection waveforms according to said first sensed portion and said second portion for each of the segments of said variable-gap sensing target unit having said different sensing gap lengths.

4. The method for adjusting a magnetic sensor according to claim 3, wherein

said normal sensing target unit is a body of revolution, a locus of a circumferential side surface about a rotation axis line of said body of revolution constitutes said moving path, and said first sensed portion and said second sensed portion are disposed alternately along said circumferential side surface, and

said variable-gap sensing unit is a body of revolution, a plurality of segments having turning radii different from each other are disposed along a circumferential side surface about a rotation axis line of said body of revolution and said first sensed portion and said second sensed portion are disposed in each of the plurality of segments so that said plurality of

segments have said sensing gap lengths different from each other.

5. The method for adjusting a magnetic sensor according to claim 1, wherein

said magnetic sensor further includes a temperature correcting section for correcting temperature-dependent fluctuations of the detection waveforms detected by said magnetic field detecting section, and the method further comprising the step of:

setting by said temperature correcting section a correction coefficient so that said threshold agrees with said intersection point level value over substantially all predetermined temperature ranges.

6. The method for adjusting a magnetic sensor according to claim 4, wherein

said magnetic sensor further includes a temperature correcting section for correcting temperature-dependent fluctuations of the detection waveforms detected by said magnetic field detecting section, and the method further comprising the step of:

setting by said temperature correcting section a correction coefficient so that said threshold agrees with said intersection point level value over substantially all predetermined temperature ranges.

7. The method for adjusting a magnetic sensor according to claim 5, wherein

said step of setting said correction coefficient further comprising the steps of:

obtaining two detection waveforms by said magnetic field detecting section and allowing said threshold to agree with a first intersection point level value, which is determined by said two detection waveforms, by said threshold adjusting and setting section while a temperature is set to a first temperature and two levels of said sensing gap lengths are used;

obtaining two detection waveforms by said magnetic field detecting section again and calculating a

second intersection point level value determined by said two detection waveforms that are detected again while the threshold set by said threshold adjusting and setting section is not changed, said temperature is changed to a second temperature that is different from said first temperature and two levels of said sensing gap lengths are used; and

setting said correction coefficient so that said second intersection point level value agrees with said threshold.

8. A device for adjusting a magnetic sensor, comprising:

a magnet for generating a magnetic field;

a sensing target unit in which a first sensed portion and a second sensed portion are magnetically inequivalent to each other, are disposed along a moving path passing through a position opposed to said magnet through a magnetic gap, and can be moved integrally along said moving path;

a magnetic field detecting section for detecting magnetic field fluctuations in said magnetic gap based on the fact that said first sensed portions and said second sensed portions pass through said magnetic gap alternately;

a waveform processing section for binarizing detection waveform detected by said magnetic field detecting section based on a predetermined threshold;

a threshold adjusting and setting section for setting said threshold so that it can be adjusted relatively with respect to said detection waveforms;

a sensing gap length changing and setting section for changing and setting sensing gap lengths, which are formed between said first sensed portion or said second sensed portion and said magnetic field detecting section in said magnetic gap, among a plurality of setting values;

a detection waveform obtaining section for obtaining detection waveforms for said plurality of setting values by said magnetic field detecting section; and

an intersection point level value calculating section for calculating an intersection point level value indicated by an intersection point between a plurality of detection waveforms detected for said plurality of setting values when said plurality of detection waveforms are superimposed in phase.

9. The device for adjusting a magnetic sensor according to claim 8, wherein

said plurality of setting values are set at two levels,

said detection waveform obtaining section obtains two detection waveforms, and

said intersection point level value calculating section calculates an intersection point level value from said two detection waveforms as a target value with which said threshold should agree.

10. The device for adjusting a magnetic sensor according to claim 9, wherein

said sensing target unit is a variable-gap sensing unit for adjustment which is attached to said magnetic sensor in place of a normal sensing target unit having a constant sensing gap length and in which segments having different sensing gap lengths coexist, and

said detection waveform obtaining section obtains said detection waveforms according to said first sensed portion and said second portion for each of the segments of said variable-gap sensing target unit having said different sensing gap lengths while said magnet is attached to a fixed position.

11. The device for adjusting a magnetic sensor according to claim 10, wherein

said normal sensing target unit is a body

of revolution, a locus of a circumferential side surface about a rotation axis line of said body of revolution constitutes said moving path, and said first sensed portion and said second sensed portion are disposed alternately along said circumferential side surface, and

said variable-gap sensing unit is a body of revolution, a plurality of segments having turning radii different from each other are disposed along a circumferential side surface about a rotation axis line of said body of revolution and said first sensed portion and said second sensed portion are disposed in each of the plurality of segments so that said plurality of segments have said sensing gap lengths different from each other.

12. A magnetic sensor, comprising:

a magnet for generating a magnetic field;

a sensing target unit in which a first sensed portion and a second sensed portion are magnetically inequivalent to each other, are disposed along a moving path passing through a position opposed to said magnet through a magnetic gap, and can be moved integrally along said moving path;

a magnetic field detecting section for detecting magnetic field fluctuations in said magnetic gap based on the fact that said first sensed portions and said second sensed portions pass through said magnetic gap alternately;

a waveform processing section for binarizing detection waveform detected by said magnetic field detecting section based on a predetermined threshold; and

a threshold adjusting and setting section for setting said threshold so that it can be adjusted relatively with respect to said detection waveforms,

wherein a first detection waveform is obtained by changing a sensing gap length, which is defined to be a predetermined specific value between said

first sensed portion or said second sensed portion and said magnetic field detecting section in said magnetic gap, from said specific value forcibly,

a second detection waveform is obtained according to the sensing gap length that is defined to be said specific value and

said threshold is adjusted so that it agrees with an intersection point level value that is indicated by an intersection point between said first detection waveform and said second detection waveform when said first detection waveform and said second detection waveform is superimposed in phase.